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Lamination of PDMS films by different methods

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The interest in elastomers has increased over the last decades due to the versality of the material. Elastomers used for electro active polymers (EAP) have received a lot of interest. Especially PDMS has shown promising features.

The aim of this work is therefore to investigate different methods on how to laminate two PDMS film together since this is a currently a crucial step in the production of EAP films. One investigated method **(method 1)** is to use an amino silane (bis(3-(trimethoxy)propyl)amine) as an adhesive. The other investigated method **(method 2)** is to plasma treat the surface of the films and adhere them together.

Figure 1: Apparatus to determine the peel strength.

The films were prepared by curing the commercially available elastomer Elastosil RT 625 from Gelest. For both methods the process conditions and the peel strength **(figure 1)** are investigated. The investigated process conditions for method 1 are the amount of the amino silane in the interface and the time it needs before it is adhered, and for method 2 the time it takes the films to fully adhere.